

**M.Sc. ZOOLOGY**  
**First Semester**  
**Animal Diversity, Taxonomy and Biosystematics**  
**(MSZ-01)**

**Duration: 3Hrs.**

**Full Marks: 70**

**Part-A (Objective) =20**  
**Part-B (Descriptive)=50**

**(PART-B: Descriptive)**

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

- 1. Answer the following question (any five) 2×5=10**
- (a) How asexual reproduction occurs by Strobilation?
  - (b) Describe Conjugation in relation to sexual reproduction.
  - (c) What are the physical means of Artificial Parthenogenesis?
  - (d) Describe about the Basic Nephridial System.
  - (e) What do in cytotaxonomy?
  - (f) From which gland Scent gland is modified. What is its functions?
  - (g) Define alpha, beta and gamma taxonomy.
- 2. Write short notes (any three) 3×3=9**
- (a) Book Lung
  - (b) Corpora Allata
  - (c) Pitfall traps
  - (d) Ecdysone
  - (e) Prothoracicotropic hormone (PTTH)
- 3. Write the Difference between (any two) 2×3=6**
- (a) Sympatric species and Allopatric species.
  - (b) Parapatric species and Peripatric species.
  - (c) Monotypic species and Polytypic species.
- 4. Answer the following question (any five) 5×5=25**
- (a) "The Corona or Wheel organ is most striking feature of the Rotifers". Explain.
  - (b) Describe the external structures of Bugula avicularia.
  - (c) What are the different methods of collecting Ectoparasites?
  - (d) Describe the Biological species concept. What are the problems with the Biological species concept?
  - (e) What is Trinomial Nomenclature? Describe the common rules of Trinomial Nomenclature.
  - (f) Describe the Endocrine Control of Reproduction in Insects.
  - (g) Describe the mechanism of excretion in insects.

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*(The figures in the margin indicate full marks for the questions)*

**Duration: 20 minutes**

**Marks – 20**

**PART A- Objective Type**

**Choose the correct answer from the following options:**

**1×20=20**

- (i) Linnaeus is credited with  
(a) Theory of Biogenesis (b) Binomial Nomenclature  
(c) Phylogenetic System (d) Historia Plantarum
- (ii) Which of the following have been used in Chemotaxonomy?  
(a) Pheromones (b) Isozymes  
(c) Colour pigments (d) All the above
- (iii) Which of the following technique is used for routine molecular taxonomy analysis?  
(a) Chromatography (b) Electrophoresis  
(c) Chromosome painting (d) none of these
- (iv) A system of classification based on ancestry of organism is called  
(a) Natural system (b) Phylogenetic system  
(c) Homologous system (d) Analogous system
- (v) Berlese Tulgreen funnels are preferred method for extracting invertebrates from  
(a) Lotic water habitat (b) Lentic water habitat  
(c) Tree canopy (d) Soil and leaf litter
- (vi) Paedogamy is  
(a) The fusion of smaller sized and morphologically different gametes takes place.  
(b) The fusion of morphologically and physiologically identical gametes takes place.  
(c) The sexual union of young individuals produced immediately after the division of the adult parent cell by mitosis.  
(d) The fusion of the macrogametes.
- (vii) The blastogenesis is  
(a) The process of development of a bud into an adult animal.  
(b) A multiple fission where the nucleus of the cell divides very rapidly into many nuclei.  
(c) A special type of transverse fission found in metazoans animals.  
(d) A process by which the organisms develop or regenerate their lost parts.

- (viii) Stratum spongiosum is  
 (a) outermost layer of epidermis (b) innermost layer of epidermis  
 (c) outermost layer of dermis (e) innermost layer of dermis
- (ix) A complete Ectoproct colony is called  
 (a) Zoarium (b) Ooecium  
 (c) Avicularium (d) None of these
- (x) Gyanaecomastism found in  
 (a) Monotremes (b) Metatheria  
 (c) Eutheria (d) All the above
- (xi) In Urochordata Notochord is found in  
 (a) Larval life (b) Adult life  
 (c) Both larval and Adult life (d) None of these
- (xii) In Hemichordata notochord is arises from the anterior part of the alimentary canal and extends to the  
 (a) Collar (b) Trunk  
 (c) Basal part of the Proboscis (d) in between collar and trunk
- (xiii) In Cephalochordata Coelom is  
 (a) Enterocoelic (b) Scizocoelic  
 (c) Both Enterocoelic and Scizocoelic (d) None of these
- (xiv) Specimen used for original publication by an author is  
 (a) Holotype (b) Syntype  
 (c) Paratype (d) Allotype
- (xv) The third name in trinomial nomenclature is  
 (a) species (b) subspecies  
 (c) genus (d) subgenus
- (xvi) Sugar baits are employed to catch  
 (a) moth (b) diptera  
 (c) hemiptera (d) all of these
- (xvii) Taxonomic hierarchy refers to  
 (a) stepwise arrangement of categories for classification of organism.  
 (b) a group of senior taxonomist who decided the nomenclature.  
 (c) Classification of organism based on fossil record  
 (d) Classification of organism based on morphological and molecular studies.
- (xviii) In cryptonephridial system of excretion in insects, the distal end of the malpighian tubules inserted into  
 (a) In between midgut and hindgut (b) In between hindgut and rectum  
 (c) into the hindgut (d) into the rectum
- (xix) The Aquatic insects are uricotelic, excretes mainly  
 (a) uric acid (b) Ammonia  
 (c) urea (d) All the above
- (xx) In the hamolymph of insects, uric acid combines with the  
 (a) sodium carbonates (b) potassium carbonates  
 (c) sodium and potassium carbonates (d) None of these